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(54) Title: IMPROVEMENTS IN OR RELATING TO BEVERAGES (57) Abstract This invention relates to drink compositions which contain sedimenting material (e.g. fruit pulp) or compositions which contain fruit based product of poor colloidal stability, (e.g. pineapple or passionfruit). Without the use of a stabiliser, fruit pulp and other insoluble fruit derived solids can settle to the bottom of the drink composition, forming a multicoloured layered sediment giving the product an undesirable and unsightly appearance. Various artificial or natural stabilisers have been available to minimise this phenomenon (e.g. carboxymethylcellulose or pectin). However this present invention uses gelatinised starch in such a concentration that it substantially reduces or eliminates the tendency for the insoluble matter to settle out, as well as providing a stable, natural turbid and opaque cloud. This enables the drink composition to exhibit a homogeneous cloudy appearance throughout the whole product.		

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IMPROVEMENTS IN OR RELATING TO BEVERAGES

This invention relates to drink compositions and, especially, but not exclusively, to soft drink compositions. It is particularly (although
5 again not exclusively) applicable to undiluted drinks or concentrated drink compositions. The drinks may have an intense sweetener (such drinks typically do not contain any added sugar), or the drink may not have an intense sweetener.

10 For the avoidance of doubt, by the term "no or low - added sugar" as used herein is meant a drink composition which does not contain added sugar, or which contains only a low amount (relative to the amount necessary to obtain the desired sweetness if there were no other sweetener but sugar in the drink). The word "sugar" used herein refers to sucrose,
15 fructose, glucose and any other soluble carbohydrate sweetening material. Sugar may, however, be naturally and inherently present in other components of the drink composition.

The present invention came from work associated with soft drinks,
20 such as drinks which contain fruit juice or fruit based drinks of poor colloidal stability such as passion fruit or pineapple juice. The invention will be put into context using guava fruit juice - containing drinks as an example, but it will be appreciated that the invention is not restricted to such drinks. The invention helps to take account of the stability of
25 sedimenting material as well as those products which exhibit colloidal loss.

Drinks which contain fruit sedimentary material, for example fruit, ground up fruit peel, pectates, hesperiden, for example guava fruit
30 sedimentary material, have a problem in that the sedimentary material

tends to settle out of suspension/dispersion when a bottle of the drink stands on a shelf for some time (eg some soft drinks that contain fruit sedimentary material have the sedimentary material settle out as a layer on the base of the bottle in as short a time as a day or so). When drinks are
5 made that contain such pulpy, or otherwise sedimentary, fruit juice, for example orange juice and lemonade i.e. products of low viscosity, the pulp and other sedimentary agents can settle out even more noticeably. Some consumers find the presence of particulate material settling out of the drink unattractive.

10

According to a first aspect of the invention we provide a drink comprising a liquid component and a suspended or dispersed component (hereafter referred to as the suspended component) that is susceptible to coming out of suspension or dispersion, in which the drink further
15 comprises gelatinised starch; the gelatinised starch being present in such concentration that it reduces or substantially eliminates the tendency for the suspended component to come out of suspension or dispersion.

We have appreciated that gelatinised starch, surprisingly, can be
20 used to prevent sedimentation of sedimentary material in a drink.

Preferably the gelatinised starch is present in a concentration of at least 0.2%w/v at ready to drink strength.

25 Preferably the gelatinised starch is present in a concentration of not more than 2.5%w/v at ready to drink strength.

Preferably the gelatinised starch is present at a concentration of between a 0.2% and 2.5% more preferably the gelatinised starch is

present at a concentration of between 0.8% and 1.4%. Most preferably the gelatinised starch is present at a concentration of 1%w/v.

5 Preferably the suspended component (or at least 80% of the suspended component) stays suspended for at least 4 months. More preferably the suspended component (or at least 80% of it) stays suspended for at least 6 months. Most preferably the suspended component stays suspended for at least 12 months.

10 Preferably the suspended component is fruit based sedimentary or cloudy matter. The origin may be any one or more of orange, blackcurrant, peach, raspberry, strawberry, apple, pear, grapefruit, passion fruit, pineapple, guava, or mango.

15 Preferably the drink comprises water. The drink may comprise carbonated water. The drink may be ready to drink.

The drink may have an alcohol content.

20 The drink may have a non-sugar sweetener, or a bulk sweetener.

The drink may have more than one component susceptible to coming out of suspension.

25 Preferably the gelatinised starch comes from barley, wheat, rye, corn or other cereal from which starch can be extracted.

In many foodstuffs, such as soft drink compositions, sugar is being replaced by intense sweeteners in order to reduce both the calorific
30 content of the foodstuff and the cariogenic effects associated with sugar.

In addition to sweetening a foodstuff, the presence of sugar also provides a foodstuff with body, texture and viscosity. These so called "non-sweet" functional properties of sugar are often desired by the consumer and are generally dependent on the level of sugar in the foodstuff.

Compared to sugar, many intense sweeteners have a very high sweetness intensity and are, therefore, required only in small amounts in a foodstuff to provide the desired sweetness profile. In a no/low-added - sugar soft drink composition, the low level of intense sweetener, coupled with the intense sweetener's poor non-sweet functional properties, may result in a no/low-added - sugar soft drink lacking in body, texture and viscosity. Many no-added - sugar soft drink compositions containing intense sweeteners therefore appear weak and "watery" and posses an unpleasant mouth feel. Furthermore, many consumers complain of a unpleasant aftertaste after drinking no/low-added sugar soft drink compositions containing intense sweeteners.

The surprising discovery that gelatinised starch increases the stability of agents in a drink that might otherwise sediment was made whilst investigating properties of gelatinised starch as a "bulking" agent to provide drinks with a better mouth feel. A separate patent application has been filed directed towards that technical effect.

25

It is extremely surprising that gelatinised starch can have both the technical effect of increasing the "mouth feel" of a drink, and also improve the stability of suspended/dispersed components within the drink. Neither effect is expected, and the presence of both is most surprising.

30

Preferably the ratio of gelatinised starch to intense sweetener (e.g. aspartame) is in the range of from 12:5 to 200:1.

5 Preferably the ratio of gelatinised starch to intense sweetener is in the range from 7:2 to 20:1, more preferably in the range from 4:1 to 65:4. More preferably still the ratio of gelatinised starch to intense sweetener is approximately 7:1.

7:1 most preferably the intense sweetener is aspartame.

10

It will be appreciated that the concentration of both gelatinised starch and intense sweetener are usually measured in the same units (weight per unit volume of the drink composition).

15

It will also be appreciated that the sweetening effect of a unit of weight of an intense sweetener differs. This is traditionally taken into account by giving each intense sweetener an equivalent sweetness value relative to sugar. The ranges of relative amounts of gelatinised starch to intense sweetener are for aspartame, and if a different intense sweetener is used we prefer to modify the ranges by multiplying by the ratio of the sugar equivalent sweetness ratio of the other intense sweetener to that of aspartame to take that into account. This does not matter so much for the wider ranges, but may affect things more for the narrower ranges.

20

25

If a "cocktail" of intense sweeteners is used we would envisage multiplying the ranges by an equivalent sweetness weighted figure dependent upon the proportions of each component of the cocktail.

The drink composition may be ready to drink (ie does not need diluting).

30

A further aspect of the present invention is to provide a drink concentrate composition comprising one or more of:-

- 5 (i) in the range of from 0.6 to 2.0% w/v of a gelatinised starch,
(ii) in the range of from 0.01 to 0.25% w/v of an intense sweetener,
(iii) in the range of from 5 to 40% v/v of a juice,
(iv) in the range of from 0 to 1% v/v of a flavouring.

- 10 In the case where the drink has all 4 of (i) to (iv) the balance may substantially comprise water.

- Again if an intense sweetener other than aspartame is used we may prefer to adjust the proportion of intense sweetener by a multiplier
15 dependent upon the ratio of the equivalent sweetness of aspartame to that of the other intense sweetener.

- Preferably when the drink is concentrate it has a composition comprising from 0.7 to 1.6% w/v, more preferably from 0.8% to 1.3%
20 w/v, of a gelatinised starch. It preferably has from 0.08 to 0.18% w/v of an intense sweetener. More preferably still the concentrate composition comprises approximately 0.9% w/v of a gelatinised starch and approximately 0.13% w/v of an intense sweetener.

- 25 Preferably the drink compositions comprises 5 to 40% v/v of a juice (eg fruit juice).

Preferably the drink composition comprises 0 to 1% v/v of a flavouring.

Preferably the drink is a soft drink. The drink may be a no or low, added sugar drink.

In the compositions of the present invention the starch is in a gelatinised form. A gelatinised starch in the compositions according to the present invention may be derived from plants, roots, tubes, seeds or fruits.

Preferably the gelatinised starch is derived from barley, maize, wheat, tapioca or waxy maize (- it is preferably derived from a cereal). Apart from native starches the starch used could also be modified starch. Modified starch refers to native starch (for example maize, wheat, barley, tapioca, waxy maize, or a mixture of two or more thereof) which has been modified to change the gelatinisation characteristics. The modification process may involve cross linking of the glucose chains or the substitution of side groups on the glucose chains. The above processes are performed using reagents such as sodium trimetaphosphate to cross link and propylenoxide to substitute the glucose side groups. Furthermore, the starch may be pre-gelatinised and dried before being added to the product. In the present invention the starch used, modified or native, will be in a gelatinised form in the final product.

The intense sweetener, if used, may be in any of the commercially available intense sweeteners - such as sodium saccharin, acesulfame K, or aspartame cyclamate, or a mixture of two or more thereof.

Preferably the concentration compositions according to the present invention comprise from 0 to 25% v/v of fruit based ingredients. The fruit based ingredients may be obtained by the extraction and concentration by evaporation of the juices extracted from fresh fruit, such

as orange, blackcurrant, peach, raspberry, strawberry, apple, pear, grapefruit, passion fruit, pineapple, guava, or mango, including a mixture of two or more thereof. For incorporation into the compositions of the present invention the juice may be sourced from concentrated juice or
5 single strength juice. Single strength juice may contain inherently up to 10% w/v of natural sugar. Preferably the juice incorporated into the concentrate composition according to the present invention provides from 0.5 to 4% w/v of natural sugar in a concentrate composition.

10 The compositions according to the present invention may be flavoured by one or more commercially available flavourings, such as those available from such flavour houses as Givaudan-Roure, Firmenich, IFF, Quest or Haarmann & Reimer.

15 The drink compositions of the present invention may further comprise one or more of any of the following components:-

- (i) an acidulent
- (ii) a buffing agent
- 20 (iii) a preservative
- (iv) a colorant
- (v) a fruit comminute.

The acidulent may be a fruit acid, such as malic acid, citric acid or
25 lactic acid, or a mixture thereof. The buffing agent may be sodium citrate, potassium citrate, calcium citrate, sodium malate, potassium malate, calcium malate, or a mixture thereof, but is preferably sodium citrate.

The preservative may be potassium sorbate, sodium metabisulphite or sodium benzoate, or a mixture of two or more thereof. The colorant may be carotene, anthocyanin or any other nature or artificial colouring, or a mixture thereof. Examples are grapeskin extract, beta-carotene, carmine cochineal, tartrazine, sunset yellow FCF and brilliant blue FCF. The fruit communitie may be concentrated orange, blackcurrant, peach, raspberry, strawberry, apple, pear, grapefruit, passion fruit, pineapple, guava, or mango fruit communitie, or a mixture of two or more thereof.

10 In another aspect the present invention provides a drink comprising carbonated water.

The drink may have an emulsion component. The drink may have a dairy product component which may be milk, cream, yoghurt or an extract from any of these.

Preferably the drink composition comprises a potable alcohol content, this alcohol content may about 1%, 2%, 3%, 4%, 5% or 6% abv or above.

20

If a gelatinised starch is to be used in combination with an intense sweetener the compositions organoleptic and physical characteristics may closely match those for sugar sweetened drink compositions. That is, the drink compositions according to the present invention (when an intense sweetener is used) may possess a sweetness profile and a body, viscosity, texture and mouthfeel normally associated with sugar sweetened drink compositions. The drink compositions according to some embodiments of the present invention do not suffer from the unpleasant aftertaste and the unattractive "watery" appearance which some intensity sweetened drink compositions possess.

30

It is important, in some embodiments of the present invention, that the starch used in the drink compositions is pure, that is does not contain, significant quantities of for example, proteins and insoluble fibres (by significant quantities we mean for example not more than, say 0.5%).
5 These impurities could lead to unstable products with sediment eg protein-anthocyanin sediment. Impure sources of starch such as potato pulp could thus cause problems in some cases.

10 Some fruit based drinks have an oily, or oil-like component which can form a ring around the top of the container. This can be unsightly and off-putting to some consumers. We have found that the use of gelatinised starch can also prevent (or reduce) the formation of the "neck-ring".

15

It will be appreciated that we prefer to provide the drink compositions in a transparent or translucent container (otherwise the consumer would not notice sediment or a neck-ring).

20 According to another aspect of the present invention we provide a method of keeping an agent suspended in a drink comprising having gelatinised starch in the drink to help keep the agent in suspension/dispersion in the body of the drink.

25 Preferably the method further comprises adding starch to the drink and then gelatinising it.

Preferably the method comprises starch which may be gelatinised and then added to the drink.

30

Preferably the method comprises adding starch to the drink before or after gelatinising the starch, and the starch may be added before or after the agent is added to the drink.

5 Preferably the method further comprises adding an intense sweetener.

Preferably the method comprises gelatinised starch present at a concentration of between 0.8% w/v and 1.4% w/v. More preferably the
10 gelatinised starch is present at about a concentration of 1% w/v at ready to drink levels.

Another way of defining one of the aspects of the invention is as a method of improving the visual appearance of a drink comprising using
15 gelatinised starch in the composition in order to delay the sedimentation of sedimentary material and/or intensify the colour of the drink.

According to another aspect of the present invention we provide the use of gelatinised starch in the preparation of a drink to increase the
20 stability of an agent in the drink to render the agent less likely to come out of suspension/dispersion in comparison with the same drink but without the gelatinised starch.

The present invention will be further described with reference to
25 the accompanying figures of which:-

Figure 1 shows a pair of drinks after they have stood still for about 3 months, the left hand drink being in accordance with the composition of Example 3 given later, and the right hand drink
30 being of the same composition, but without gelatinised starch, and

Figure 2 shows a left hand, middle, and right hand pair of drinks, the left hand drink of each pair being in accordance with Example 1, Example 2, and Example 3 respectively, and the right hand drink of each pair being of the same composition as the left hand drink of the pair, but without the gelatinised starch.

The present invention will be further described with reference to the following examples:

Example 1 - Passionfruit juice containing soft drink composition

A sweetened ready to drink soft drink composition comprising of the following components:

15	(a) starch (derived from barley)	1.0%w/v
	(b) sugar (dry weight)	9.6%w/v
	(c) passion fruit juice concentrate (68 Brix)	2.5%v/v
	(d) citric acid	0.25%w/v
20	(e) colour (1% beta-carotene)	0.02%w/v
	(f) passionfruit flavour	0.5%v/v
	(g) water	add to make 100%v/v

1. A portion of component (g), approx. 60% was added to a low shear mixer and stirred continuously;
2. Components (b) and (c) were then added and blended into the solution;
3. Components (d), (e) and (f) were then added and allowed time to dissolve completely;
4. Component (a) in un-gelatinised form was then added; and

5. Finally, the remaining portion of component (g) was added to obtain the desired volume.

The above blended product composition was then introduced into a high temperature short time plate heat exchanger system, which served to pasteurise the concentrate composition and also to gelatinise the starch component (a). The heat exchanger system enabled the rapid heating of the drink composition in a holding tube to a selected temperature for a specific period of time. To ensure pasteurisation had occurred, the drink was held at a temperature of approximately 93 degrees C for at least 15 seconds. To ensure that gelatinisation of a component (a) had occurred, the drink was held at a temperature in the range of 103 to 115 degrees C, for a time in the range of 20-30 seconds.

Products were then put onto long term storage to assess cloud stability with time and the ability to retain sediment in suspension without an excessive amount of solids settling. Products were assessed against equivalent products without the addition of barley starch or other form of stabiliser.

20

Results show that for those products with barley starch, a strong cloud remains for a period in excess of 6 months while standing undisturbed. For those products without starch, cloud loss was rapid, some within a period of hours, and the cloud had settled out within a day or so.

25

For those products with barley starch the visual appearance of products showed little evidence of settled solids after a period of 2 months. Some settled solids were noticed after this for a period in excess

of 6 months. With samples not containing barley starch, settled solids were noticed within hours.

Example 2 - Mango juice containing soft drink composition

5

A sweetened ready to drink soft drink composition comprising of the following components:

	(a) starch (derived from barley)	1.4%w/v
10	(b) sugar (dry weight)	8.0%w/v
	(c) mango fruit juice concentrate (68 Brix)	5.4%v/v
	(d) mango puree (single strength)	2.0%v/v
	(e) citric acid	0.25%w/v
	(f) colour (1% beta-carotene)	0.02%w/v
15	(g) mango flavour	0.5%v/v
	(h) water	add to make 100%v/v

The composition of example 2 was treated in the same way as that of example 1, with the same sort of results: a strong cloud was still
20 present after a 6 month period, whereas in the equivalent product with no gelatinised starch or other stabiliser the cloud settled out with a few weeks.

Example 3 - Guava juice containing soft drink composition

25

A sweetened ready to drink composition comprising of the following components:

	(a) starch (derived from barley)	1.4%w/v
30	(b) sugar (dry weight)	8.4%w/v

15

- | | |
|---|---------------------|
| (c) guava fruit juice concentrate (68 Brix) | 1.5%v/v |
| (d) citric acid | 0.35%w/v |
| (e) colour (anthocyanin) | 0.02%w/v |
| (f) guava fruit flavour | 1.5%v/v |
| 5 (g) water | add to make 100%v/v |

The composition of example 3 was treated in the same way as that of example 1, with similar results: the cloud of suspended components was still visible after 6 months, with little evidence of any deposition
10 after 2 months, whereas the equivalent composition, but without the gelatinised starch (or other stabiliser) settled solids were noticeable within hours.

It will be appreciated that the suspended or dispensed component in
15 the examples comprises components of the passionfruit juice concentrate, or mango fruit juice concentrate and/or mango puree, or guava fruit juice concentrate, as appropriate to the example.

Figure 1 shows on the left a soft fruit drink in accordance with
20 Example 3. On the right is the same drink composition, but with no gelatinised starch.

Figure 1 shows what the two drink compositions look like after standing still for about 3 months. They look very much the same after
25 standing for 6 months. The sedimentary material is the drink without gelatinised starch has settled out at the bottom to form a dark layer, and leaving a much paler, and a cleaner, "supernatant" above it. In the drink with gelatinised starch there is a uniform cloud, of uniform colour.

In the case of guava the sedimentary material can settle out in a matter of days. Other sedimentary materials may take longer to settle out.

5 When the two drinks of Figure 1 are shaken, so as to give the right hand (non-gelatinised starch) drink a cloud, we are surprised to find that the colour of the gelatinised starch drink is different: it has a "flatter", more intense colour. With some drinks, such as guava, it is a less noticeable difference than with other drinks, eg pink grapefruit.

10

Figure 2 shows, working from the left, a pair of passion fruit juice drink compositions, with and without gelatinised starch (the drink on the left of each pair has the gelatinised starch) at a level of about 1% w/v (1.0% w/v for the passionfruit, and 1.4% for the mango and guava
15 drinks). For the left hand drink of the left hand pair the drink is in accordance with Example 1, and the right hand drink is the same, but with no gelatinised starch.

20 The second pair of drinks is a mango fruit juice concentrate, and puree, pair, with the left hand drink of the pair being in accordance with Example 2, and with the right hand drink of the pair being the same, but with no gelatinised starch.

25 The third (right hand) pair of drinks is the guava fruit juice drinks of Example 1, and Figure 1.

All of the drinks of Figure 2 are at ready to drink strength and have stood for about 3 months (although little difference can be seen if they stand for 6 months, or even longer).

30

The guava fruit based sedimentary material comes out of suspension most noticeably, and the effect of using gelatinised starch is most noticeable in that pair (the right hand pair).

- 5 The passion fruit based sedimentary material also has a very marked tendency to come out of suspension and the effect of using gelatinised starch is readily noticeable in that pair (the left hand pair).

- 10 The mango fruit based sedimentary material comes out of suspension less readily than the other two, but the effect of using gelatinised starch can still be seen (the mango drink without it has a colour gradation from top to bottom, getting darker towards the bottom).

- 15 A further surprising effect of using gelatinised starch is that it can improve the visual appearance of a drink, especially a coloured drink composition. It can make them brighter in colour, and can make them more opaque.

- 20 In particular we have made a soft drink concentrate for pear, and for pink grapefruit, dilute to drink drinks. The colour of these with the gelatinised starch was a deeper, more opaque, brighter flat colour in comparison with similar drinks which had no gelatinised starch. This gave them, especially the pink grapefruit, an unusual colour.

- 25 This effect is also seen in ready to drink formulations, but is more noticeable in the concentrates.

- 30 According to another aspect the invention comprises the use of gelatinised starch in a drink composition to improve its visual appearance, preferably to brighten and/or deepen its colour.

The gelatinised starch gives, in some embodiments, a uniform "cloud" to the drink, and may make it more opaque. This may help to give a flat, bright, colour.

5

We have tested the colour of some drinks which are similar to those discussed in the examples and which have gelatinised starch at very roughly about 1% w/v. We tested the colour in the known Hunter Lab colorimeter which gives a colour a co-ordinate position within a standard colour cylinder. The results are given in the following table:-

10

Product	L	a	b
Peach Drink	49.8	16.4	56.3
Orange Drink	64.6	0.9	1.5
Pink Grapefruit Drink	54.5	24.8	19.0
Pear Drink	61.8	4.1	67.2
Red Berry Drink	35.9	40.1	17.2

These co-ordinates can be used to plot the relative colours and their intensities, which results in a degree of measurement of opacity.

15

When the same measurements are made on equivalent drinks, but with the drinks having no gelatinised starch the colour density was found to be lower. The colour had been altered in some cases by at least 2%, or at least 5% or 10% (or higher) when gelatinised starch was used, and in other cases by perhaps at least 15%, 20% or 25% or higher (or even more). We would aim in some embodiments to achieve a change in colour density of 5% to 15%, most preferably about 10%.

20

The gelatinised starch increases the cloud density of the drink, making it more opaque and increasing the light absorbence. The appearance of the drink is lighter, brighter, than an equivalent without
5 gelatinised starch. The use of gelatinised starch increases the depth of colour and gives the drink a matt, flat, effect, instead of being translucent. The drink is "whiter", as if milk had been poured into it.

We have also conducted tests on the taste of drinks with gelatinised
10 starches. Whilst taste is a subjective matter, we have found that a significant proportion of tasters preferred the taste of a drink with gelatinised starch to that of the equivalent drink, with no gelatinised starch. We were surprised to discover that the gelatinised starch appeared to be enhancing the taste of the drink (not just increasing the "body" and
15 mouthfeel - the comparative drink had sugar to the equivalent sweetness level).

According to a further aspect the invention comprises the use of gelatinised starch to improve the taste of a drink.

20

In the embodiments that we have produced the gelatinised starch improved the visual appearance of a drink not only by keeping cellular and other sedimentary material (eg pectates, ground peel) in suspension (instead of letting it settle out) but also contributed to a uniform
25 appearance of the drink composition by providing cloud. This helps to make the drink more opaque, and can give a "flatter", more intense colour (where the drink is coloured). The gelatinised starch provides a drink having a natural turbid and opaque cloud. This enables the drink composition to exhibit an homogenous cloudy appearance throughout the
30 whole product.

It is extremely surprising to us that gelatinised starch improved the mouthfeel of the examples of the drink we prepared, improved its colour, improved the stability of suspended particles in the drink, and even
5 appears to improve the taste of the drink.

CLAIMS

1. A drink comprising a liquid component and a suspended or dispersed component (hereinafter referred to as the suspended
5 component), that is susceptible to coming out of suspension or dispersion in which the drink further comprises gelatinised starch; the gelatinised starch being present in such concentration such that it reduces or substantially eliminates the tendency for the suspended component to come out of suspension or dispersion.
- 10 2. A drink according to claim 1 in which the gelatinised starch is present in a concentration of at least 0.2% w/v at the ready to drink concentration of the drink.
- 15 3. A drink according to claim 1 or claim 2 in which the gelatinised starch is present in a concentration of not more than 2.5% w/v at ready to drink concentration.
4. A drink according to any preceding claim in which the gelatinised
20 starch is present at a concentration of between 0.2% and 2.5%.
5. A drink according to claim 4 in which the gelatinised starch is present at a concentration of between 0.8% and 1.4%.
- 25 6. A drink according to claim 5 in which the gelatinised starch has a concentration of about 1% w/v.
7. A drink according to any preceding claim in which the suspended component stays suspended (or at least 80% of the suspended component)
30 for at least 4 months.

8. A drink according to claim 7 in which the suspended component (or at least 80% of it) stays suspended for at least 6 months.

5 9. A drink according to claim 8 in which the suspended component stays suspended for at least 12 months.

10. A drink according to any preceding claim in which the suspended component is a pulp/sediment (eg a fruit pulp) or colloidal matter.

10

11. A drink according to claim 10 in which the pulp is any one or more of orange, blackcurrant, peach, raspberry, strawberry, apple, pear, grapefruit, passionfruit, pineapple, guava, or mango.

15 12. A drink according to any preceding claim that comprises carbonated water.

13. A drink according to any one of claims 1 to 11 that comprises water.

20

14. A drink according to any preceding claim that has an alcohol content.

15. A drink according to any preceding claim has a non-sugar
25 sweetener.

16. A drink according to any preceding claim that has more than one component susceptible to coming out of suspension/dispersion.

17. A drink according to any preceding claim in which the gelatinised starch comes from any one, or more, of barley, maize, wheat or tapioca.
18. A drink according to any preceding claim that is ready to drink.
- 5 19. A drink according to any one of claims 1 to 17 that is to be diluted with water before drinking.
- 10 20. A drink according to any preceding claim that has a more intense colour than it would have if there were no gelatinised starch in it.
21. A drink substantially as described herein with reference to any one of the examples.
- 15 22. A method of keeping an agent suspended in a drink comprising having gelatinised starch in the drink to help keep the agent in suspension/dispersion in the body of the drink.
- 20 23. A method according to claim 22 which further comprises adding starch to the drink and then gelatinising it.
24. A method according to claim 22 which comprises gelatinising the starch and then adding it to the drink.
- 25 25. A method according to any one of claims 22 to 24 in which starch is added to the drink before or after gelatinising the starch, and in which the starch is added before or after the agent is added to the drink.
- 30 26. A method according to any one of claims 22 to 25 which further comprises adding an intense sweetener.

27. A method according to one of claims 22 to 26 comprising using gelatinised starch in the drink at a concentration of between 0.2 to 2.5% w/v.

5

28. A method according to claim 27 in which the gelatinised starch is present at a concentration of between 0.8% to 1.4% at ready to drink strength.

10 29. A method according to claim 28 in which the gelatinised starch is present at about a concentration of 1%.

30. The use of gelatinised starch in the preparation of a drink to increase the stability of an agent in the drink to render the agent less
15 likely to come out of suspension/dispersion in comparison with the same drink but without the gelatinised starch.

31. The use of gelatinised starch in accordance with claim 30, which use also intensifies the colour of the drink in comparison with an
20 equivalent drink that has no gelatinised starch.

1/2



FIG 1

2/2

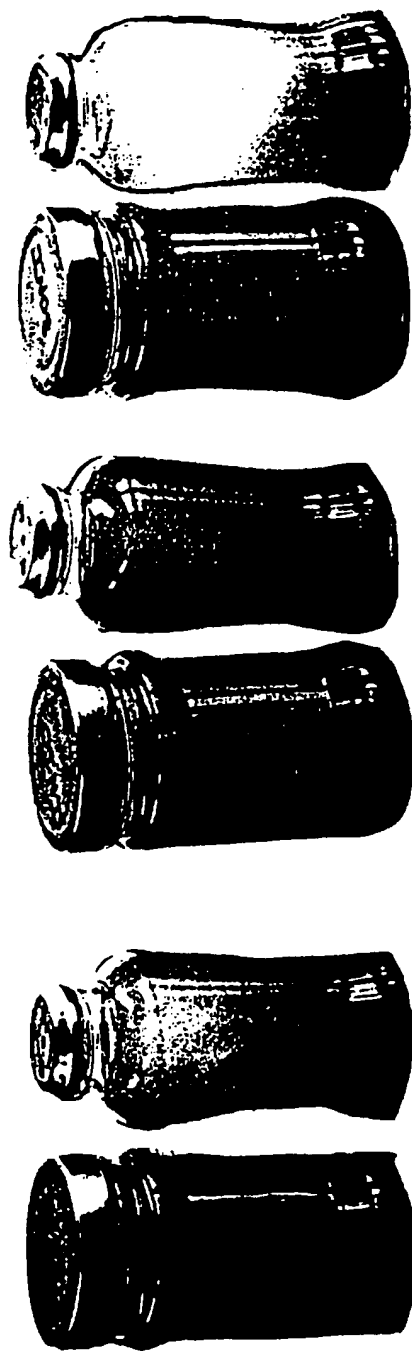


FIG 2

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 96/00460

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A23L2/52 A23L2/62

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A23L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US,A,4 081 567 (G.J.HABER ET AL) 28 March 1978	1,2, 7-26,30, 31
A	see column 2, line 24-36 see column 4, line 7-13 see column 4, line 24-29 see column 5, line 14-16 ---	3-6, 27-29
A	FR,A,1 519 441 (NATIONAL STARCH AND CHEMICAL CORPORATION) 12 July 1968 see page 3, column 2, paragraph 4; example 5 see page 7, column 1, paragraph 2 --- -/-	1-31

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

8 July 1996

Date of mailing of the international search report

19. 07. 96

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR,A,2 331 293 (ROQUETTE) 10 June 1977 see page 3, line 22-34 see page 15, line 5-10; claims 1-8,14; example 5; tables I,VI ---	1,2,7-31
A	GB,A,1 170 868 (GENERAL MILLS) 19 November 1969 see the whole document ---	1-31
A	US,A,3 931 433 (J.D.ESKRITT ET AL.) 6 January 1976 see the whole document ---	1-31
X	EP,A,0 544 349 (UNILEVER) 2 June 1993 see column 5, line 43-50; claims; examples -----	1,2,7-31

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 96/00460

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		CA-A- 1080023	24-06-80
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		NL-A- 7612590	20-05-77
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		ZA-A- 9208725	13-05-94

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